JAN 24 1930

STATISTICAL BULLETIN
Metropolitan Life Insurance Co.

VOL. X DECEMBER, 1929 No. 12

TUBERCULOSIS DEATHRATE DECLINES AS PREDICTED

It is now a certainty that the tuberculosis deathrate for 1929 will be the lowest ever recorded in the United States. This is indicated by the cumulative mortality rate for all forms of tuberculous disease, up to the end of November, among approximately 19,000,000 Industrial policyholders of the Metropolitan Life Insurance Company. This rate was only 85.9 per 100,000—an astoundingly low figure, which marks a drop of 5.7 per cent., as compared with that for the corresponding period of 1928. Nineteen twenty-eight, in turn, registered the minimum tuberculosis deathrate recorded up to the end of that year. The course of the deathrate among this large cross-section of the population has always been an accurate index of what is happening among the general population; and there can be no doubt, therefore, that, when the mortality statistics for the latter become available, it will be found that tuberculosis mortality has declined appreciably throughout the United States.

We shall be able to announce in the STATISTICAL BULLETIN for January, 1930, the exact tuberculosis deathrate for 1929, and to give the exact per cent. decline from that recorded in 1928 and prior years. But an announcement that a new minimum has been reached for tuberculosis will be only a repetition of what we have reported year after year, with only two exceptions, since we began, in 1911, to compute deathrates for individual causes of death among Metropolitan Industrial policyholders. *The time has gone when a new low point in tuberculosis mortality occasions surprise.*

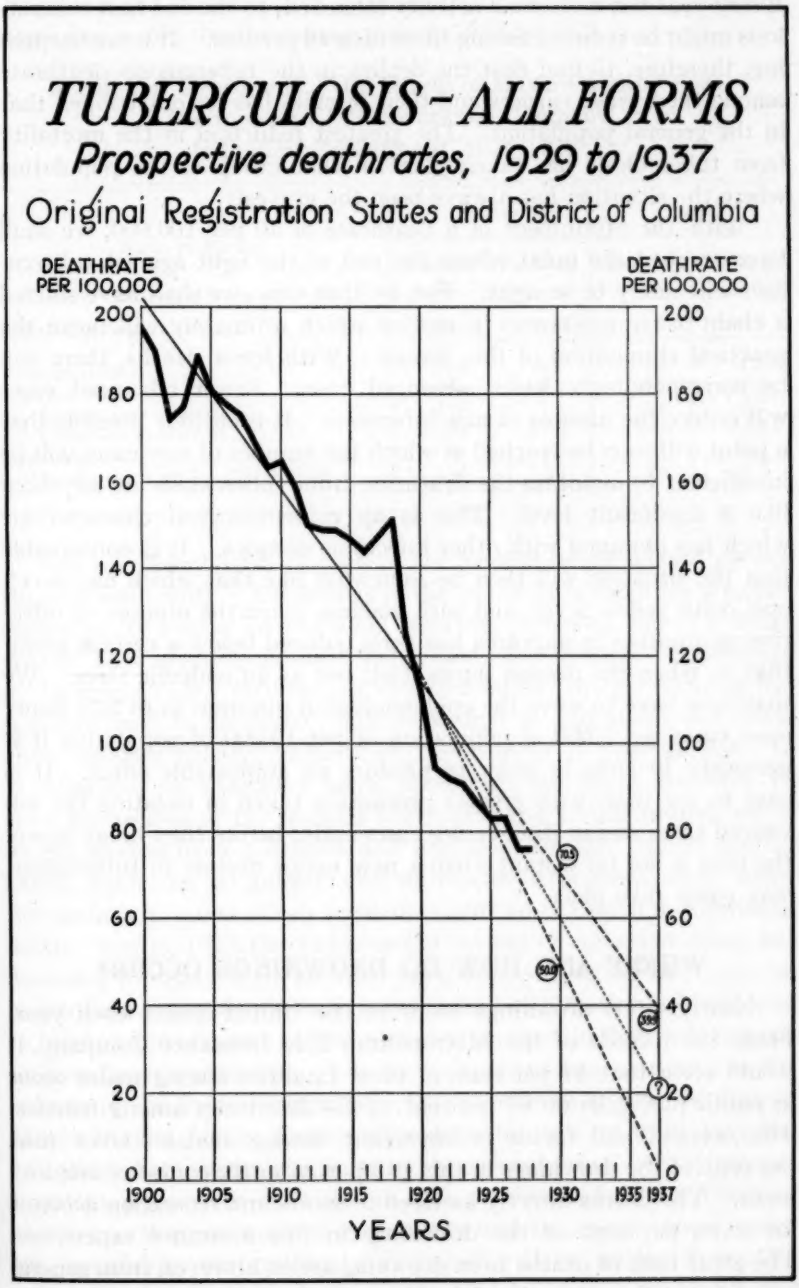
Only eighteen years ago, in 1911, the tuberculosis deathrate of Metropolitan Industrial policyholders was 224.6 per 100,000 lives exposed to risk. This disease was, far and away, the leading cause of death, with a mortality rate 58 per cent. in excess of that for the second cause, heart disease, and 95 per cent. above that for the third

cause, pneumonia. The 1929 tuberculosis deathrate will be only a little more than one-third the figure for 1911.

It is not enough to say that tuberculosis is destined to be displaced as one of the leading causes of death. It is, indeed, going to rank among the relatively minor causes of death; and the end of the next decade should see it well on its way to a deathrate of 40 per 100,000. This is indicated by the graphic chart on page 3, which shows what has been happening since 1900 in a constant geographical area, namely, the Original Registration States of 1900. The graph also shows what is likely to be the course of the tuberculosis deathrate for the next ten-year period. One thing is clear, namely, that the projected deathrates, as made several years ago, have been found to be conservative, which gives encouragement to the view that the forecasts for the next decade will prove to be not far from the truth. Some years ago we predicted that a rate of under 70 per 100,000 would be registered for tuberculosis in the general population by the year 1930; and that, by 1937, there was good prospect that the mortality rate would drop below 40. As a matter of fact, the tuberculosis deathrate in the Original Registration States dropped, in 1928, to 76 per 100,000. As noted in the first paragraph, there was a decline of nearly six per cent. in one-sixth of the population (the Metropolitan Industrial policyholders) for the first eleven months of 1929. Even if a smaller decline (let us say five per cent.) prevailed in the Original Registration States, the 1929 figure would be 72.2 per 100,000. It would require only a 3.1 per cent. drop in 1930 to bring about a rate of less than 70 in these States.

Many factors have operated to this end. The increasing prosperity of the country during the last three decades has undoubtedly played an important part in curtailing the deathrate of tuberculosis. For, such prosperity has been reflected in better and more food, clothing and housing for all the people. Shorter hours of employment have also been a factor. The work of the NATIONAL TUBERCULOSIS ASSOCIATION and of its many local allies has likewise helped.

This Association formulated and crystallized the details of the tuberculosis campaign in America. The keynote was the spread of knowledge with regard to the causes of tuberculosis and the best method for its prevention and cure. Finally, there has been the work of the Metropolitan Life Insurance Company among its Industrial policyholders. One of the Company's first steps in the health campaign which it inaugurated twenty years ago was the distribution of millions of copies of the pamphlet entitled "A War on Consumption."


TUBERCULOSIS - ALL FORMS
Prospective deathrates, 1929 to 1937
Original Registration States and District of Columbia
DEATHRATE PER 100,000
DEATHRATE PER 100,000
200
180
160
140
120
100
80
60
40
20
0
1900
1905
1910
1915
1920
1925
1930
1935
1937
YEARS

Every year has seen some activity launched, to the end that tuberculosis might be reduced among these insured persons. It is not surprising, therefore, to find that the decline in the tuberculosis deathrate among these wage earners and their families has far outstripped that in the general population. The greatest reduction in the mortality from tuberculosis has taken place in that group of the population where the situation has always been the gravest.

With the attainment of a deathrate of 40 per 100,000, we shall have reached the point where the end of the fight against tuberculosis will surely be in sight. For, by that time, we shall have started a chain of circumstances in motion which ultimately will mean the practical elimination of this disease. With fewer deaths, there will be correspondingly fewer advanced cases. Fewer advanced cases will reduce the number of new infections. It is entirely possible that a point will soon be reached at which the number of new cases will be insufficient to maintain the deathrate from tuberculosis at anything like a significant level. This is an epidemiological characteristic which has obtained with other infectious diseases. It is conceivable that the situation will then be somewhat like that which has developed with yellow fever, and with malaria, when the number of infective mosquitoes in any area has been reduced below a certain point, that is, when the disease burns itself out as an endemic force. We shall first have to solve the epidemiological question as to how many open cases per 1,000 of population or per 10,000 of population it is necessary to have in order to produce an appreciable effect. It is easy to see that, with greater precaution taken in isolating the advanced cases and in discovering cases early, before they break down, the time is not far distant when a new major decline in tuberculosis may again take place.

WHERE AND HOW DO DROWNINGS OCCUR?

Nearly 8,000 drownings occur in the United States each year. From the records of the Metropolitan Life Insurance Company, it would seem that 84 per cent. of these fatalities among males occur in public places, as do 89 per cent. of the drownings among females. The occupational factor is important among males. Over nine per cent. of the drownings in this group arise in the course of employment. The deaths directly ascribed to sports and recreation account for seven per cent. of the drownings in this insurance experience. The great bulk of deaths from drowning arises, however, from general exposure to the water hazard (77 per cent. of the total) in public

places, but not in recreation. The facts for males and females are shown below for the three-year period, 1926 to 1928:

Accidental Drownings. By Origin of Hazard and by Sex.
Metropolitan Life Insurance Company
Industrial Department, 1926-1928

Origin of Hazard	Males		Females	
	Number	Per Cent.	Number	Per Cent.
Total Drownings	3,084	100.0	475	100.0
Occupational	283	9.2	5	1.1
Public Places	2,604	84.4	423	89.0
Sports and recreation	219	7.1	32	6.7
Others in this class	2,385	77.3	391	82.3
Domestic	41	1.3	21	4.4
Miscellaneous and not classified	156	5.1	26	5.5

The age distribution of each of the several broad hazard classes varies considerably. Drownings in the course of occupation are concentrated, of course, in the main working period of life—15 to 64 years. This age-range covered 96 per cent. of such cases. Drownings in the use of public facilities are centered largely (67 per cent.) in the age-division 5 to 24 years. The drownings in and about the home affect children mostly; 73 per cent. occur under 15 years of age.

Statistics of mortality have heretofore not been available to show the origins of the hazards which give rise to the annual toll of 95,000 deaths from accidents and negligence in the United States. Safety work can be guided, and its results ascertained, only when the conditions under which accidents occur are set forth in informing detail. During 1929, the Registrars of several of our states have undertaken to study their accident records according to the origin of hazard and to supply the safety movement with facts which will lead to pointed and effective accident prevention work in fields which have hitherto been overlooked. The facts on drownings contained in the records of the State Registrars of Vital Statistics and of the United States Bureau of the Census should go far toward indicating the localities where drownings occur in the several broad hazard groups. Accident prevention activities in this particular field are effective only when they are applied in localities and to circumstances which are specifically and minutely described. Data prepared on this principle may show where the occupational factor is dominant and

where recreational and other public hazards need to be studied and corrected.

The next decade will witness an informed and effective attack on hazard factors underlying the accident mortality record of the United States. And this will follow in part from the facts which public and private agencies are now gathering on the circumstances surrounding the occurrence of accidents.

SMALLPOX IN AMERICAN STATES AND CANADIAN PROVINCES FIRST SIX MONTHS OF 1929

Reports for the first six months of 1929 from thirty-eight states, the District of Columbia and seven Canadian provinces indicate that, although the case-fatality rate from this disease dropped only slightly as compared with the same period last year, the number of cases declined materially. The case-fatality rate for the thirty-nine American communities was 0.30 per 100, as compared with 0.34 and 0.55 in the corresponding period of 1928 and 1927, respectively. In the seven Canadian provinces, there was a rise in the case-fatality rate to 0.38, as compared with 0.12 in 1928 and 0.26 in 1927. It should be noted, however, that the case-rates in both countries were extremely low. In Canada, the actual number of deaths was so small in each of the three years that the increase in the case-fatality rate is neither as significant nor important as it would be if based on larger numbers of fatal cases.

Although smallpox was less prevalent and not so virulent in the United States during the first six months of this year as in the like periods of 1928 and 1927, three states had case-fatality rates of more than one per cent. There are two very gratifying items in the reports of the prevalence of smallpox from individual states, namely, that no state reported cases in excess of 2,000 and that not a single case was reported by the District of Columbia. Last year, three states—Indiana, Kansas and North Carolina—reported more than 2,000 cases for the first six months.

The Province of Saskatchewan, Canada, reported three deaths in the first half of 1929 among only 65 cases, giving the very high case-fatality rate of 4.62 per 100.

The improvement in the United States is gratifying, but there should be no relaxation of vigilance in the prevention and control of the disease. We have, time and time again, called attention in the BULLETIN to the fact that there is always danger that reports showing lower incidence of smallpox may give rise to false optimism. We

would, accordingly, again stress the point that vaccination is the only security against smallpox and that unvaccinated persons under present conditions, are a menace to any community. Even in this report, favorable as it is, we have the example of a Canadian province with a case-fatality rate of 4.62. Such a rate, if it had prevailed generally in the United States and Canada, would have caused nearly 1,000 deaths in six months from this loathsome and entirely preventable disease.

The following tables show the number of cases, deaths and the case-fatality rates in selected states and provinces showing either a high case-fatality rate or above-average prevalence of smallpox; and also in a group of American states and Canadian provinces.

Selected States and Canadian Provinces Showing a High Fatality Rate or Above-average Prevalence of Smallpox During the First Six Months of 1929

Area	Cases	Deaths	Deaths per 100 Cases
UNITED STATES			
Arizona (1)	53	1	1.89
California	1,611	7	.43
Idaho	391	0	0
Indiana (2)	1,758	11	.63
Iowa	971	2	.21
Kansas (2)	1,377	2	.15
Kentucky (1)	806	4	.50
Maine	72	1	1.39
Massachusetts	272	1	.37
Michigan	1,250	5	.40
Montana	311	1	.32
North Carolina	429	0	0
Ohio	1,376	3	.22
Oregon (2)	920	2	.22
South Dakota	738	0	0
Tennessee (1)	178	2	1.12
Utah	447	1	.22
Washington (2)	1,234	3	.24
West Virginia	367	1	.27
Wisconsin	299	0	0
Wyoming	187	1	.53
CANADA			
British Columbia	358	1	.28
Ontario (2)	496	0	0
Saskatchewan	65	3	4.62

(1) High fatality rate for first six months of 1928 also.

(2) Above-average prevalence for first six months of 1928 also.

Smallpox Cases, Deaths and Case-Fatality Rates
First Six Months of Each Year, 1927-1929
For 38 States and District of Columbia and 7 Canadian Provinces

Area	1929			1928			1927		
	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases
U. S. and Canada.	17,278	52	0.30	22,487	72	0.32	17,796	95	0.53
U. S. (38 States and D. C.)....	16,217	48	0.30	20,886	70	0.34	16,651	92	0.55
Canada (7 Provinces)..	1,061	4	0.38	1,601	2	0.12	1,145	3	0.26

HEALTH RECORD FOR NOVEMBER, 1929

The deathrate was lower in November, 1929, among Metropolitan Industrial policyholders than in any previous November on record. More or less noteworthy declines as compared with November, 1928, are shown for typhoid fever, measles, influenza, tuberculosis, cerebral hemorrhage, heart disease, respiratory conditions other than pneumonia, diarrheal complaints, Bright's disease, puerperal diseases, homicides and accidents. On the other hand somewhat higher deathrates were registered for scarlet fever, whooping cough, diphtheria, cancer and pneumonia, and there was an increase of 17.2 per cent. in the mortality from automobile accidents. The November deathrate for all causes combined was 5.4 per cent. below that for October.

The year-to-date deathrate at the end of November was 9.2 per 1,000. This is so little higher than the deathrate for the corresponding period of last year that the calculation must be carried to the second decimal place to show the difference. Among policyholders living West of the Rocky Mountains, the cumulative deathrate was 6.7 per 1,000 while for the rest of the United States it was 9.4. These figures are identical with those recorded for the like period of 1928. The mortality rate in Canada has increased to 9.1 per 1,000, as compared with 8.9 up to the end of November, 1928.

As pointed out in another part of this Bulletin, the tuberculosis deathrate has been lower this year than ever before. New minimums will also be established for diphtheria and puerperal diseases, and, in all probability, for typhoid fever.

The general deathrate for the large cities of the United States

in November was 12.0 per 1,000 estimated population. This was slightly above the figure for October (11.6) but lower than that for November 1928 (12.3). There was more sickness in November than in October from diphtheria, influenza, measles, scarlet fever and smallpox, but there were fewer cases of poliomyelitis and typhoid fever. As compared with November, 1928, more cases of scarlet fever and smallpox were in evidence, but diphtheria, influenza, measles, poliomyelitis and typhoid fever were less prevalent. These statements are based on the number of cases reported during the first four weeks of October and November, 1929, and of November, 1928.

Reports from thirty-seven states show 9,348 cases of diphtheria in November, as compared with 8,290 cases in October. The more noteworthy increases were registered in Pennsylvania, Illinois and Arizona. The Health Commissioner of Illinois stated, on November 13th, that diphtheria was being reported in that state at the rate of about 200 cases a week and that its prevalence had more than doubled in two months. Measles cases, according to reports from twenty-five states, increased almost 75 per cent. in November as compared with October. New Jersey, Minnesota, Maryland, Idaho and Washington reported the larger increases. The rise in the incidence of scarlet fever was very considerable, 13,521 cases being reported in November, as compared with 9,167 in October. Connecticut, New York, New Jersey, Nebraska, Montana, California and Oregon reported the more noteworthy increases.

Smallpox was much more prevalent than in October. In Ohio, it increased from 116 cases to 444; in Indiana, from 86 to 517; in Iowa, from 64 to 184; and in Wyoming, from 4 to 39. Two serious outbreaks were reported from Ohio, one in Crawford County and the other in the City of Galion. Other outbreaks occurred in Alton, Ill., and in Olean, N. Y. In the latter city, a single case was reported on the last day of August; early in October, a second case was discovered in East Olean; since then 15 cases have been reported.

Reports from forty-five states show for poliomyelitis cases a decline from 460 cases in October to 230 in November. A very considerable increase is shown in the incidence of influenza and a drop in that of typhoid fever. In Iowa, however, typhoid cases increased from 15, in October, to 76 in November. In an outbreak at Clinton, in that State, 74 cases and six deaths had been reported up to November 28th. An investigation by the State Health Department indicated that the probable source was improperly sterilized bottles at a local dairy which was patronized by practically all of the

victims. Five outbreaks have occurred in the State during the past five months, four of which were traced to milk supplies.

Among the outstanding public health activities during November are the following: In Detroit, a campaign to prevent diphtheria started November 17th, in which 800 physicians and the Department of Health pledged themselves to exert every effort to protect the children of that city against this disease. The physicians agreed to give toxin-antitoxin at certain hours for $1.00 per injection, and to give it free of charge to patients who could not afford to pay. Anti-malaria campaigns are being conducted in several Oklahoma counties and hundreds of thousands of quinine capsules are being distributed by the State Health Department to infected persons in these counties. In New York State, under the auspices of the State Medical Society, a Committee on the Cost of Medical Care will send out 2,000 questionnaires; and it is hoped that the information thus derived will be a great aid in the study of the subject. The Division of Diseases of Metabolism of the PHILADELPHIA GENERAL HOSPITAL has established a complete and efficient organization for the scientific care of diabetics. The family physician is invited to refer patients who are financially unable to secure private service to this department.

The following table shows the mortality among the Industrial policyholders for November, 1929; October, 1929, and November, 1928, together with the cumulative rate for the first eleven months of each year.

METROPOLITAN LIFE INSURANCE COMPANY

Deathrates* per 100,000 for Principal Causes, Premium-paying Business in Industrial Department (Annual Basis)

MONTHS OF NOVEMBER, 1929; OCTOBER, 1929 AND OF NOVEMBER, 1928

CAUSES OF DEATH	RATE PER 100,000 LIVES EXPOSED*				
	Nov., 1929	Oct., 1929	Nov., 1928	Cumulative Jan. to Nov.	
				1929	1928
TOTAL—ALL CAUSES	790.7	836.1	830.8	920.6	915.7
Typhoid fever	2.4	3.6	2.9	2.3	2.7
Measles	.4	.4	.9	3.0	5.5
Scarlet fever	1.8	1.3	1.5	2.5	2.7
Whooping cough	3.7	3.8	3.0	5.8	5.6
Diphtheria	11.8	8.3	9.9	8.4	9.6
Influenza	13.1	9.1	14.2	42.2	22.0
Tuberculosis (All forms)	73.2	79.7	76.3	85.9	91.1
Tuberculosis of resp'y system	65.4	68.9	66.3	75.9	79.7
Cancer	73.8	76.6	72.3	75.8	75.2
Diabetes mellitus	16.6	16.7	16.6	18.2	17.5
Cerebral hemorrhage	50.6	55.5	52.2	56.2	56.1
Organic diseases of heart	126.1	128.1	138.6	143.8	142.0
Pneumonia (All forms)	64.1	53.1	63.7	87.3	88.6
Other respiratory diseases	9.2	10.4	17.0	11.8	13.3
Diarrhea and enteritis	15.0	31.6	19.3	20.9	24.7
Bright's disease (Chronic nephritis)	63.1	66.8	65.8	68.3	70.3
Puerperal state	11.1	10.4	11.8	13.1	14.0
Suicides	7.7	8.4	7.7	8.4	8.3
Homicides	5.3	7.6	6.7	6.3	6.5
Other external causes (excluding suicides and homicides)	61.7	65.7	64.0	63.4	62.8
Traumatism by automobiles	23.9	25.7	20.4	19.9	17.8
All other causes	179.8	199.1	186.5	196.9	197.0

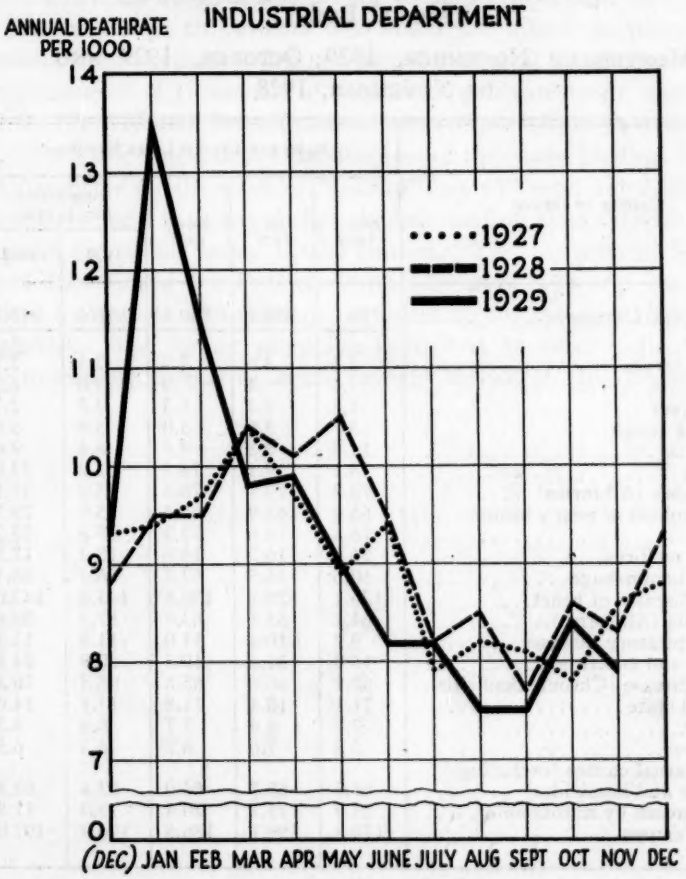
*All figures include infants insured under one year of age.

Correspondence on the subjects discussed in these BULLETINS may be addressed to: The Editor,

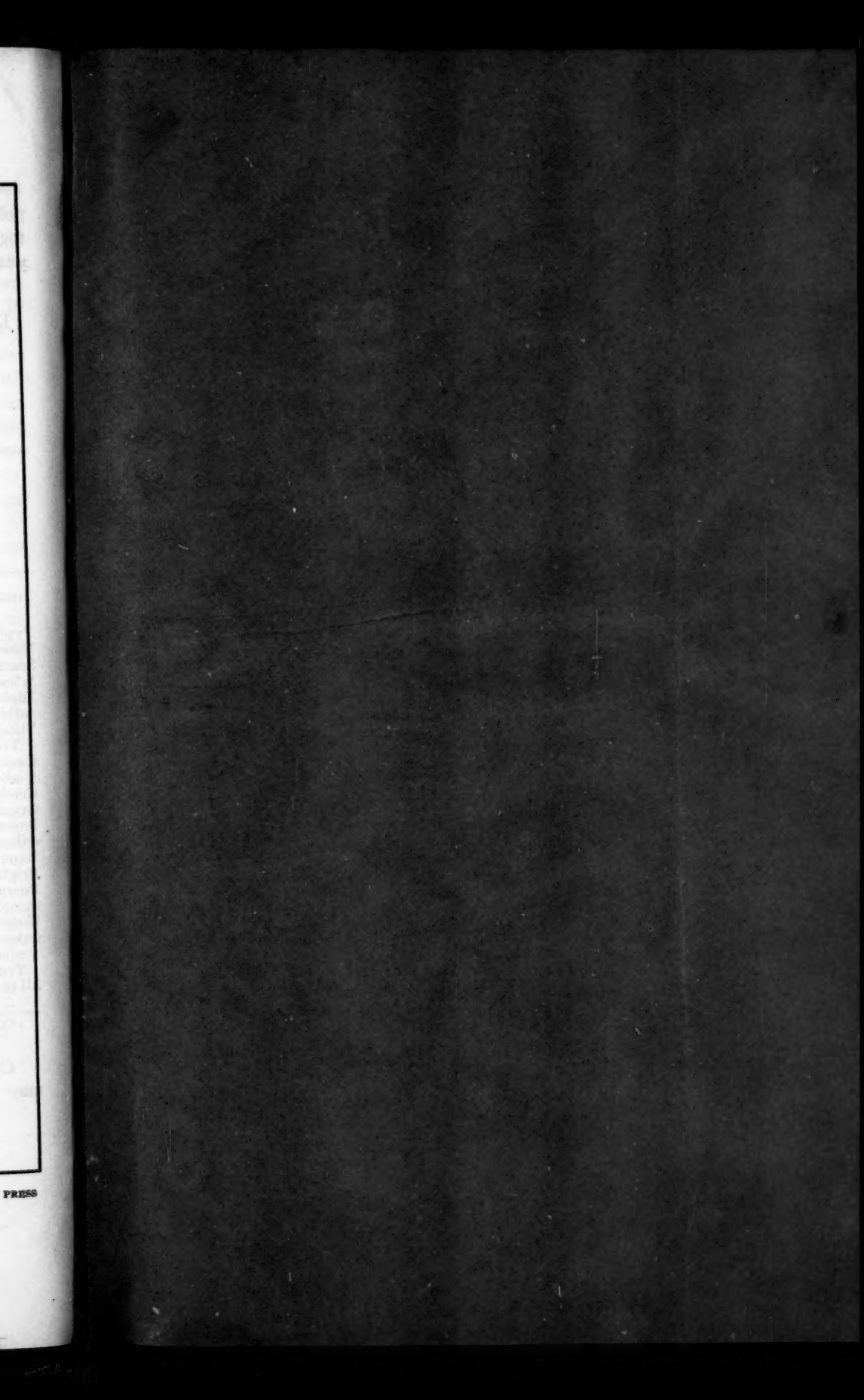
STATISTICAL BULLETIN,
Metropolitan Life Insurance Company,
1 Madison Avenue, New York City.

DEATHRATES
FROM ALL CAUSES

METROPOLITAN LIFE INSURANCE CO.
INDUSTRIAL DEPARTMENT



1927	9.4	9.7	10.4	9.7	8.9	9.4	7.9	8.2	8.1	7.8	8.6	8.8
1928*	9.5	9.5	10.4	10.1	10.5	9.5	8.2	8.5	7.7	8.6	8.3	9.3
1929	13.4	11.4	9.8	9.9	9.0	8.2	8.2	7.5	7.5	8.4	7.9	

* Rates for 1928 are final

METROPOLITAN LIFE INSURANCE COMPANY PRESS
NEW YORK, U.S.A.
77878